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Report to the Chairwoman, Subcommittee
on Commerce, Consumer Protection, and
Competitiveness, Committee on Energy
and Commerce, House of Representatives

FOREIGN INVESTMENT

Issues Raised by Taiwan's Proposed Investment in McDonnell Douglas



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The Honorable Cardiss Collins
Chairwoman, Subcommittee on Commerce,
Consumer Protection, and Competitiveness
Committee on Energy and Commerce
House of Representatives

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Dear Chairwoman Collins:

As you requested, we assessed the proposed acquisition by Taiwan Aerospace Corporation of a 40-percent equity share in McDonnell Douglas Corporation's commercial aircraft division. Our objective, as requested, was to identify issues and questions relating to the acquisition's implications for U.S. national interests. This report does not attempt to answer these questions but puts them into a framework for the Subcommittee's use.

Background

On November 19, 1991, McDonnell Douglas and Taiwan Aerospace (partially owned by the Taiwanese government) signed a memorandum of understanding to form and jointly own a new aerospace company. According to McDonnell Douglas officials, this understanding would allow Taiwanese investors to acquire for \$2 billion a 40-percent share of McDonnell Douglas' commercial aircraft operations—both its ongoing programs and its proposed development of the MD-12 aircraft.¹ A definitive agreement was expected to be concluded by January 31, 1992, but as of the end of January 1992 negotiations on this agreement were still continuing. Once an agreement is reached, it is expected that executive branch agencies will review this proposed investment, as provided for under the 1988 Exon-Florio amendment to the Defense Production Act.²

Results in Brief

Taiwan Aerospace's proposed investment in McDonnell Douglas raises important public policy questions regarding the interrelationships between U.S. commercial and national security interests. In a sense, this investment crystallizes a variety of questions that are likely to persist in the 1990s. These questions concern the nature of the government's role in enhancing

¹The proposed MD-12 would be a 375-passenger aircraft with an 8,000-mile range.

²This amendment gave the President authority to review and, if warranted, block foreign investments threatening to impair national security.

the vitality of the U.S. technology base as the foundation of both U.S. commercial competitiveness and national security.

Specifically, the investment raises the following types of questions:

- What will be the effect on McDonnell Douglas, the nation's largest defense contractor, of a more complete separation of its military and commercial activities, in terms of transfers of technology and financial resources?
- What will be the longer-term effect on the overall U.S. technology base, in terms of technology transfers, strength of key components and parts suppliers, and development of engineering and scientific talent?
- How adequate is the existing U.S. government process for analyzing the implications of this sale and of other types of international partnerships that are becoming common in the aircraft industry?
- What is the nature of current competition in the commercial aircraft industry, and what is needed to compete successfully?
- To what extent is long-term capital available to industries, such as the aircraft industry, that have large development costs and a high degree of financial risk?

Effect on McDonnell Douglas Corporation

Like many U.S. defense-oriented companies facing declining military expenditures, McDonnell Douglas foresees reduced profits from its military work and greater opportunities in commercial markets.

In early 1991 McDonnell Douglas faced immediate problems on several of its efforts concerning defense systems. On January 7, 1991, the Navy Department terminated its contract to the team of McDonnell Douglas and General Dynamics for developing the Navy's A-12 Avenger.³ On January 24, 1991, McDonnell Douglas requested that the Department of Defense (DOD) establish a \$1-billion pool for advance payments on other contracts.⁴ The company was also experiencing losses in its work on the Air Force's C-17 airlifter and the T-45 trainer, and DOD stated that it considered a McDonnell Douglas bankruptcy to be a possibility at that time.

³On February 5, 1991, the Navy issued a demand letter to the team of contractors for repayment of \$1.35 billion in prior progress payments. On June 7, 1991, the contractor team filed a lawsuit asking that the court change the termination for default to a termination for convenience, which would mean that McDonnell Douglas and General Dynamics could be entitled to additional compensation and that the government would be barred from collecting the \$1.35 billion in progress payments. For further information, see *Defense Industry: Issues Concerning Five Weapon Systems Provided or Developed by McDonnell Douglas Corporation* (GAO/T-NSIAD-92-1, Oct. 3, 1991).

⁴DOD advised McDonnell Douglas that no action would be taken on the company's request until it was clear that the company had initiated austerity measures to overcome its cash flow problems. The company withdrew its request for an advance payments pool on April 1, 1991.

Meanwhile, during 1991 DOD auditors noted the importance of McDonnell Douglas' commercial activities to its overall financial health. DOD audit documents show that much of the cash that McDonnell Douglas was able to generate in early 1991 in order to avoid having to follow through on its January request to DOD for a \$1-billion advance payments pool came from its commercial activities. It was able to defer payments to certain suppliers on the MD-11 and to speed up deliveries of the MD-80. DOD management experts had noted that deliveries of the MD-11 would be a decisive factor in the company's achieving a positive cash flow in 1991.

McDonnell Douglas expects the new, jointly owned commercial aircraft corporation to be a separate entity from its military business. By separating the two businesses, the company would avoid sharing its military technologies, according to McDonnell Douglas. McDonnell Douglas expects that by maintaining majority ownership of the new company it will maintain control over critical design and systems integration, final assembly and testing, and customer support activities.

In light of the importance of McDonnell Douglas' commercial operations to its overall financial health, however, questions arise about the future viability of the company's purely military activities. For example, will the cash flows from the new company's commercial sales be available to McDonnell Douglas' military programs, or will they be reinvested in the commercial side? McDonnell Douglas representatives have stated that much of Taiwan Aerospace's \$2-billion investment would be used to pay off McDonnell Douglas' prior debts and that the proposed MD-12 would be financed through earnings of the new commercial corporation. This arrangement would mean that McDonnell Douglas' present debt burden would be alleviated by such debt repayment. However, income from the commercial side would need to be reinvested to sustain commercial programs. If the company's military activities are in fact to be completely separated from the commercial ones, what efforts are planned, both within McDonnell Douglas and within DOD, to improve the financial health of the military side?

Effects on the U.S. Technology Base

Taiwan's \$2-billion capital infusion into the U.S. aircraft industry provides support for commercial aircraft development efforts that McDonnell Douglas could not have financed on its own. Company officials stated that McDonnell Douglas had sought an experienced U.S. partner to share the development and costs of the MD-12 but could not find one. They also noted that sharing manufacturing operations with Taiwan Aerospace will mean that more work will be performed overseas than if a U.S. partner had

been found; but, even though no U.S. partner was found, more work will be done in the United States than if the MD-12 were not to be developed at all. Thus McDonnell Douglas can say the arrangement will result in additional U.S. jobs within McDonnell Douglas' design, integration, and final assembly operations. McDonnell Douglas also expects that Taiwan Aerospace's participation will help gain access to the expanding Pacific Rim aircraft market.

Even though the commercial and military activities are to be separated, certain questions remain about technology transfer. Some technology transfer to Taiwan Aerospace is expected, because this transfer is what Taiwan has indicated that it expects to gain from its \$2-billion investment. McDonnell Douglas officials have stated that most industrialized nations are already performing the basic types of work that Taiwan Aerospace will undertake and that Taiwan Aerospace's participation will not position it to build a finished product or to develop into a possible competitor.

The types of questions raised about technology transfer are both very specific and very broad. Will the agreement now being negotiated specify exactly what work and technology will be transferred to Taiwan Aerospace? What exchanges of engineering and scientific personnel are contemplated, and how will these exchanges be confined to the types of commercial technology that the agreement covers? In separating military and commercial activities, is McDonnell Douglas also going to be separating its engineering and scientific personnel to minimize interactions? What effect will this separation have on the synergy between military and commercial technologies? Since very few of the technologies on the commercial side now need validated export licenses, the U.S. government may have little information on the extent of these transfers.

A broader and even more difficult question relates to the proposed investment's longer-term effects on the U.S. subcontractor base. The only two remaining U.S. civil jet transport manufacturers, McDonnell Douglas and Boeing Aerospace Corporation, rely on thousands of subtier suppliers, many of which also supply DOD programs. To the extent that these U.S. suppliers are displaced as greater portions of aircraft manufacturing work move overseas, the U.S. technology base can be weakened.

As we have noted in previous studies, DOD has limited information on how much of its subtier supplier base is U.S. owned or located, and has limited

ability to identify foreign dependency trends in critical industry sectors.⁵

To assess the longer-term effects on the supplier base, both specific and broader questions again need to be answered. Specifically, what does McDonnell Douglas know about its suppliers? How does it select them? How do their products compare in cost, quality, and reliability with those of foreign suppliers? What has been the experience of McDonnell Douglas and Boeing in previous foreign partnerships, regarding foreign insistence on changing from U.S. suppliers to their national suppliers as production work progresses? Are U.S. subtier suppliers participating in other countries' shares of aircraft work?

In addition, what is DOD doing to improve its knowledge of its technologically important supplier base? How does it assess (1) which suppliers are critical; (2) what their financial condition is; (3) how many are foreign controlled; (4) what problems they are encountering in remaining commercially competitive; and (5) under what circumstances, and by which means, might they need to be preserved as key to defense programs?

A broader question relates to sources of innovation and the direction of future technology flows in the aircraft industry. To what extent will technology continue to flow from the military to the commercial side, as has been past experience, and to what extent will it flow from the commercial to the military side, as some experts are now predicting?

Another area of questioning relates to Taiwan's behavior on technology transfer issues. What has its record been with regard to its trade in items and technologies for which the U.S. government requires an export license? Does the fact that Taiwan is on the U.S. government's "watch list" for behavior related to intellectual property protection have bearing on the technology transfer issues raised by this proposed investment?⁶

⁵See *Industrial Base: Significance of DOD's Foreign Dependence* (GAO/NSIAD-91-93, Jan. 10, 1991) and *Adequacy of Official Information on the U.S. Defense Industrial Base* (GAO/T-NSIAD-89-40, July 18, 1989).

⁶The U.S. Trade Representative's "watch list" indicates where particular problems exist with respect to the protection or enforcement of intellectual property rights.

U.S. Process for Analyzing International Partnerships

Different types of international partnerships are becoming increasingly common in the aircraft sector, as in other high-technology sectors. The need for such partnerships stems from (1) the very high costs and risks inherent in pursuing new projects in these sectors and (2) their usefulness in gaining the access to foreign markets needed to generate the economies of scale required in such sectors. These types of linkages range from research and production joint ventures, which tend to involve the largest amount of technology transfer between firms, to marketing and licensing agreements, which tend to involve lesser amounts of technology transfer. Foreign investments can also involve technology transfer, depending on the size and terms of the investment.

For foreign investments, the U.S. government has authority to review the national security impact of mergers, acquisitions, and takeovers involving U.S. and foreign entities. This legislation is the 1988 Exon-Florio amendment to the Defense Production Act, which gave the President authority to investigate and block foreign investments threatening to impair national security. The President delegated his authority to review foreign investment transactions to the interagency Committee on Foreign Investment in the United States (CFIUS). Taiwan Aerospace's investment in McDonnell Douglas is expected to be reviewed by CFIUS once the details of the proposed investment have been negotiated.

Other types of international partnerships in the commercial aircraft industry, even those involving joint research and design work, are not closely monitored for technology transfers.⁷

As we have noted in previous studies of the CFIUS process, the Exon-Florio amendment's investment review criteria apply to a narrow range of circumstances.⁸ For the President to block an investment, three key determinations must be made regarding (1) the investment's link to national security, (2) evidence of the investment's being a possible threat to U.S. security, and (3) the adequacy of other laws protecting national security. In previous cases, even when a clear national security link has existed, CFIUS has been

⁷However, for each government-to-government memorandum of understanding regarding military coproduction programs, the Defense Authorization Act of 1989 requires DOD to consider effects on the U.S. industrial base and to regularly solicit and consider information and recommendations from the Secretary of Commerce. Special DOD review procedures are also in place under the Defense Industrial Security Program for international arrangements involving classified work.

⁸See *Foreign Investment: Analyzing National Security Concerns* (GAO/NSIAD-90-94, Mar. 29, 1990); *National Security Review of Two Foreign Acquisitions in the Semiconductor Sector* (GAO/T-NSIAD-90-47, June 13, 1990); and *National Security Reviews of Foreign Investment* (GAO/T-NSIAD-91-08, Feb. 26, 1991).

unable to find the latter two points to be applicable, except in one case involving a potential military adversary. Given the decreased military threat in this new era, to what extent will the range of circumstances under which an investment could be blocked under the Exon-Florio amendment become even narrower?

A very basic question relating to CFIUS is whether the changed strategic environment of the 1990s requires a broader concept of "national interest" than the concept of "national security interest" as employed by CFIUS. Key questions about the proposed investment's implications for U.S. commercial competitiveness in the aerospace industry are not likely to be the focus of CFIUS's review or of other specific government reviews.

Questions arise, then, about whether CFIUS is the appropriate forum for considering all the implications of this investment and others still to come that may raise similar issues, including commercial competitiveness. Since many types of international partnerships can involve technology transfers similar to those possible in foreign direct investments, is there a need for the U.S. government to have detailed knowledge of these as well? How much does the U.S. government know about what technologies were initially developed with the help of federal funds, and what is U.S. policy regarding foreign purchases of U.S. firms receiving such federal funding? Indeed, what should the role of government be in enhancing or preserving the vitality of the U.S. technology base?

International Competition in Commercial Aircraft

Currently there are only three major competitors producing large, long-range commercial transports: McDonnell Douglas, Boeing, and the European consortium Airbus Industrie. Because the costs of entering this industry are extraordinarily high, it is unlikely that new competitors will soon appear.

The industry is not regarded as perfectly competitive, because of the limited number of major firms and because Airbus consortium members provide subsidies for developing and marketing Airbus aircraft. European countries charge that U.S. aircraft companies have also received research and development subsidies from military aircraft programs of the U.S. government.

As previously noted, international partnerships have proliferated enabling other countries to participate in aircraft development and marketing. Sometimes these partnerships are directly associated with a foreign

airline's aircraft purchases—that is, if the aircraft producer is willing to develop part of the aircraft jointly with the foreign country, that country's airline (often at least partly government owned) will purchase the aircraft. Sometimes these joint development projects benefit from the indirect subsidies a foreign government may provide, for example, for aircraft-related research. The Japanese government in particular is committed to developing Japanese aircraft design and production capabilities to assure Japan's future in high-technology industries. In addition to participating in joint projects with Boeing, Japanese firms are already participating in one joint project with Airbus firms and are reported to be exploring further relationships with Airbus firms.

These types of partnerships and subsidies are a reality of the current international marketplace, and the proposed Taiwanese investment needs to be looked at in this context. For example, how does this investment differ from Boeing's ongoing joint projects with Japanese firms, or from the variety of other types of international partnerships in the aircraft industry, in terms of technology transfer, U.S. employment effects, and possible levels of foreign subsidization? If U.S. firms do not participate in such partnerships, will they lose out to Airbus, whose firms are actively pursuing the competitive advantages to be gained from such partnerships?

With foreign subsidies of national aircraft development efforts so prevalent now, how should the U.S. government respond? What role did European subsidies to Airbus play in reducing the U.S. firms' share of the world market for large transport aircraft? Was the U.S. government active enough in pursuing U.S. firms' complaints about such subsidies in international and bilateral negotiations? What are the prospects for reducing direct production and marketing subsidies through international negotiations? How are indirect subsidies being addressed? If the Taiwanese government also provides direct or indirect subsidies to the new commercial aircraft corporation, what are the implications for Boeing's continued competitive strength?

In addition, questions about the application of U.S. antitrust laws arise because of the limited number of competitors in this industry. To what extent are the two U.S. producers deterred from cooperating with each other but allowed to cooperate with foreign firms? How desirable is it to ensure that two major U.S. aircraft producers continue to compete?

Availability of Long-Term Capital

Another fundamental question raised by the proposed investment concerns the ability of U.S. financial markets to make long-term capital available at reasonable rates to firms in industries where new project design and development costs are extraordinarily high. According to DOD auditors, McDonnell Douglas' difficulty in raising such funds itself stems from a combination of (1) its own internal financial and management weaknesses, (2) the very large capital requirements for developing new aircraft, and (3) the recent reluctance of U.S. financing sources to provide such large amounts of capital for inherently risky, long-term projects.

In this sense, the proposed investment highlights the key question challenging U.S. policymakers—how to improve the U.S. economic environment so as to make long-term investment capital more readily available to U.S. firms that can contribute to U.S. economic growth.

Scope and Methodology

We prepared this report based on prior and ongoing GAO work relating to (1) McDonnell Douglas' military and commercial aircraft operations, (2) technology transfers resulting from international joint production projects, and (3) the foreign investment review activities of CFIUS. We also discussed these matters with some aircraft industry experts and a representative of McDonnell Douglas. This report is not a comprehensive assessment of all questions raised by the investment, because the details of the investment agreement are still being negotiated and consequently were not available to us.

We conducted our work in January 1992 in accordance with generally accepted government auditing standards.


As requested, we did not obtain agency comments on this report. However, we discussed these matters with DOD and Air Force officials, who expressed similar interests and concerns. These officials noted, in addition, that insufficient information has been provided to them so far to make meaningful assessments of the impact of the deal.

Unless you publicly announce its contents earlier, no further distribution of this report will be made until 30 days from its issue date. At that time, we will provide copies to the Secretaries of Commerce, the Treasury, and State; the U.S. Attorney General; the U.S. Trade Representative; the Director of the Office of Management and Budget; the Council of

Economic Advisers; and to other interested congressional committees. Copies will also be made available to others on request.

This report was prepared under the direction of Curtis F. Turnbow, Assistant Director, and Virginia C. Hughes, Evaluator-in-Charge. Please contact me on (202) 275-4812 if you have any questions concerning this report.

Sincerely yours,

A handwritten signature in cursive script that reads "Allan I. Mendelowitz".

Allan I. Mendelowitz, Director
International Trade and Finance Issues